



SoftLogix 5 Controller

(Catalog Number 1789-SL5, -SL51, -SL52)

These release notes correspond to version 2.2.0 of the SoftLogix 5 Controller.

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HTML Help

If you click the Contents button in the Help file and the Rockwell Software Contents does not appear, then you need to update the executable for HTML Help, which is hh.exe. Look on your drive for hh.exe with a date of 12/3/99 or later. Replace any versions that have an earlier date with a version that is dated 12/3/99 or later. If you do not have a version of hh.exe dated 12/3/99 or later, insert the SoftLogix 5 controller CD into your computer and double-click hhupd.exe. This installs the correct version.

Corrected Anomalies

The following anomalies were corrected in SoftLogix 5 version 2.2.0:

- Executing SoftLogix 5 on an Open Controller or using a 1747-PCIS Interface Module could cause SoftLogix 5 to shut down after 50 days if the machine executing SoftLogix 5 was not rebooted during the 50-day period.
- Immediate inputs did not function for Remote I/O, Open Controller, and 1747-PCIS Interface Module.
- SoftLogix 5 would shut down when RSLogix5 downloaded a program with illegal block transfers.
- Ethernet messages were not being canceled correctly during a shut down of SoftLogix 5.
- Resolved issues with RSLogix5 download of programs containing pending ladder edits.
- The ABL (ASCII Test for Line) instruction was not setting the status bit EM (bit 12) correctly.
- Message instructions set bits EN and ST but did not complete or timeout.
- Having an SFC as the last MCP with Skip I/O Update checked, caused an I/O scan to be missed at the end of the MCP program scan.

Instruction Execution Change

In SoftLogix 5 version 2.2.0, executing an SFR (Sequential Function Chart Reset) instruction in a STI or EUI causes a runtime fault S:11/2 to be set with major error code 44. This operation differs from an Enhanced PLC-5, where the SFR instruction will execute.

Known Windows 2000 issues

- It is possible that when an application is started in Windows 2000, the window that opens does not display completely.
- 1784-PKTX series (-PKTXD, -PKTS, -PKTX) drivers do not function on Windows 2000 versions prior to Service Pack 2 (SP2).
- Using the control panel applet/service to stop the SoftLogix 5 engine WILL STOP the engine, however, the following error message appears: Could not stop the Rockwell Automation SoftLogix 5 service on local computer. Error:997 Overlapped I/O operation is in progress.
- If both Profibus and InterbusS drivers are configured on the same SoftLogix 5 engine, the following error can occur: Error code 100; COPROCESSOR_FAILURE. This error occurs if an I/O driver fails on its "update I/O" call. The error also occurs with the Open Controller driver if the I/O configuration is incorrect, or an unexpected error occurs when communicating to the I/O device driver. The same error occurs on Windows NT 4.0 systems, however, on a Windows 2000 system the error is unrecoverable.

Known Issues in SoftLogix 5

The following sections describe known issues in SoftLogix 5 version 2.2.0:

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Engine configuration issues

Remote I/O and 1746 Local I/O scan lists are not stored in the SoftLogix 5 EEPROM file. When an EEPROM file loads, the scan list files that are stored in the ...*SoftLogix*\Data directory are used, as described in the following table:

Installed I/O Driver:	Scan List File:
A-B 1784-KTX/PKTX/OCKTX/[PCMK-Demo] RIO driver	WPLCKTXI.DAT
1747-OC/1747-PCIS I/O Scanner	WPLCOC.DAT

This could become an issue if the scan list files either become corrupted or do not exist, but you have a valid EEPROM file that is configured to Load on Memory Error or Always Load. Under this condition, when the EEPROM file loads, there will be no communication with I/O.

The remote I/O and/or SLC I/O scan lists are saved in the RSLogix5 .RSP or .X5 file if you configured your scan lists:

- Offline using RSLogix5, and saved the project
- Online using RSLogix5, and uploaded/saved the project
- Using the SoftLogix 5 Configuration Manager, and then uploaded/saved the project using RSLogix5

You can resolve the issue where the EEPROM loads, but I/O no longer functions, using one of the following methods:

- Re-download your ladder program to SoftLogix 5 using RSLogix5, if you have a saved copy that contains the remote I/O and/or SLC I/O scan lists.
- Once the EEPROM file loads, reconfigure the scan lists using the SoftLogix 5 Configuration Manager or while online with RSLogix5, then upload/save the ladder program using RSLogix5.

SoftLogix 5 engine start up and shut down

When the SoftLogix 5 engine starts with the SoftLogix 5 Status Monitor or Configuration Manager open or in the system tray, it may take up to 30 seconds for the Status Monitor or the Configuration Manager to accurately reflect the state of the engine.

ControlNet I/O

You **must** use the logic in the CNETSTRT.RSP ladder program, found in the UTILS folder on the SoftLogix 5 installation CD, when you are using ControlNet I/O.

WARNING



Use the logic in the CNETSTRT.RSP ladder program when using ControlNet I/O. Failure to use this logic could cause unpredictable machine operation with possible damage to equipment and/or injury to personnel.

You can find a description of the ladder program in the Cnetstrt_readme.pdf file in the UTILS folder on the SoftLogix 5 installation CD.

Remote I/O

- SoftLogix 5 cannot configure an Allen-Bradley Ready Panel, 2705-P21C1. Attempting to auto configure or manually configure this device will fail. This device is not yet supported on a remote I/O link controlled by the SoftLogix 5 controller.
- The SoftLogix 5 engine resets the global fault status flag when the global inhibit flag is set.
 - If a remote I/O rack is faulted and you then inhibit the rack by setting the rack inhibit bit, the fault bit for that rack is reset.
 - For example, if you have rack 1:0, 1/2 rack, when you remove power from the rack, the global fault bit is set for rack 1 (S:7/1). If you now set the global inhibit bit for rack 1 (S:27/1), the global fault bit is reset for rack 1. If you reset the rack inhibit bit, the fault bit is set again if the rack is still disconnected.
- 1784-PCMk and 1784-PCMKS cards should not be used for controlling Remote I/O in a production environment.

- Using 1784-KTx card in 16-bit mode on Compaq Computers.
 - There is an ISA Bus standardization issue that becomes apparent on some Compaq computers. The 1784-KTx cards can be used in either 16-bit or 8-bit modes, depending on the position of the E3 jumper on the 1784-KTx card. If you defined a 1784-KTx DH+ or RIO driver in the SoftLogix 5 controller and attempt to start the SoftLogix 5 engine, it may not successfully start.
 - If SoftLogix 5 does not start, check the Windows NT event log and look for a reference to a problem with the M16 tests on the 1784-KTx card. If you see this entry in the event log, then you need to configure the 1784-KTx E3 jumper for 8-bit mode. Note that using the 8-bit mode results in a slight performance decrease.
- Block Transfer Queue Full bits do not set correctly. Status file bits S:17/1, S:17/2, S:17/3, and S:17/4 are used to indicate when more than 128 block transfers are queued for each Remote I/O channel. Currently these status bits are not being set for this condition.

Instruction execution

- **ONS, DTR, and INV instructions** are not supported on input branches.
 - The ONS, DTR, and INV instructions are not allowed in input branches because of a functional difference between the SoftLogix 5 engine and an Enhanced PLC-5. This functional difference exists because the SoftLogix 5 engine uses compiled ladder logic, whereas a PLC-5 uses interpreted ladder logic.
 - All rungs in your ladder logic program that have ONS, DTR, or INV instructions placed on input branches have to be modified before the program can be successfully downloaded to the SoftLogix 5 engine. The following example shows how a rung with an ONS on an input branch could be modified to execute on the SoftLogix 5 engine:

Original rung:

```
SOR XIC B3/0 BST ONS B3/2 NXB XIO B3/3 BND ADD 1 N7:0 N7:0 EOR
```

Converted Rung:

```
SOR XIC B3/0 ONS B3/4 OTE B3/2 EOR
```

```
SOR XIC B3/0 BST XIC B3/2 NXB XIO B3/3 BND ADD 1 N7:0 N7:0 EOR
```

These two rungs work identically to the original rung. Note that an extra bit (B3/4 in this example) has to be allocated in the data table for each converted ONS.

- **ADD and SUB instructions** do not properly set math flags when operands are type float or double.
- **DIV instruction** does not properly set math flags.
 - When the DIV instruction executes, it only latches the math flags that change rather than writing the sign, zero, overflow, and carry flag results to the math flag register (S:0). Consider the following example of a DIV instruction executing in SoftLogix 5:

Description	Sign	Zero	Overflow	Carry
State of flags <i>before</i> DIV executes	0	1	0	0
Result of DIV instruction <i>should set</i> the flags to this state	1	0	0	0
<i>Actual state</i> of flags after DIV executes	1	1	0	0

- In this example, the sign and zero flags are set after the DIV executes, but only the sign flag should have been set.
- If you are monitoring math flags after a DIV instruction executes, place the following instruction before the DIV instruction to set the sign, zero, overflow, and carry flags to 0, for example:
MOV 1 N7:0
- When dividing -32768 by -1, the result is -32768, but only the sign flag is set. In this case, the overflow flag should have also been set.
- **FAL instruction** does not execute like a PLC-5 FAL when POS = -1.
 - In an Enhanced PLC-5, when a FAL instruction executes and the value in the .POS sub-element of the FAL control word is a negative number, the controller faults with major fault code 21.
 - In the SoftLogix 5 engine, when .POS = -1 and the FAL instruction executes, .POS increments to 0 and the destination value at position 0 in the FAL array is modified according to the FAL expression. When the FAL executes again at .POS = 0, operation resumes normally. This execution only affects FAL instructions configured for Incremental or Numerical modes, since under these conditions the instruction may take multiple program scans to complete. When using ALL mode, the instruction completes during the program scan so this behavior would not be observed.
 - You should be aware that the SoftLogix 5 engine faults with major fault code 21 if POS <= -2 and the FAL executes in the SoftLogix 5 engine.
 - Make sure that the value that is placed into .POS is not a negative number and the FAL instruction will execute properly.

MSG instruction

There is a potential conflict when using MSG instructions with SoftLogix 5 if RSLinx and the RSLinx Ethernet driver are installed on the same computer as SoftLogix 5. This conflict only occurs when the SoftLogix 5 Ethernet driver is configured to allow receipt of unsolicited messages.

To avoid this problem, start SoftLogix 5 prior to starting RSLinx. For more information see “Programming in the SoftLogix Controller” in the *SoftLogix 5 User Manual*, publication 1789-UM001.

SFC execution

- I/O update occurs after each step on first scan, on a simultaneous SFC branch.
 - When using the “Standard” Program Scan Mode for an SFC that has a simultaneous branch, on the first scan through the simultaneous branch the transition file is only scanned after the right-most step in the branch is scanned. On all other passes through the simultaneous branch (as long as the branch’s transition file is still false), the transition file is scanned after each branch step is scanned. This is correct operation in the SoftLogix 5 controller.
 - However, an I/O update should only occur after the right-most step is scanned on the first pass through the simultaneous branch. *In the SoftLogix 5 controller, an I/O update occurs after each branch step is scanned on the first pass.* Under most circumstances, this is not an issue. However, this is an operational difference between the way an Enhanced PLC-5 and SoftLogix 5 scan simultaneous branches.
- Forcing an SFC transition should disable scan of the transition file.
 - SFC transitions that are forced ON are scanned one time in the SoftLogix 5 engine before the next SFC step is scanned.
 - In an Enhanced PLC-5, SFC transition files that are forced ON are not scanned at all.

Technical Support

The SoftLogix 5 controller ships with an initial one-year support term. This support is included with your product purchase price. The services available to you during this initial support term include:

- Technical support via phone, email, and fax
- Product updates when new versions are released
- Media replacement
- *The Software Connection* magazine

Following your initial one-year support term you may choose to purchase a support contract extension for your SoftLogix 5 controller. Annual support extensions are typical but support terms of any duration are available.

Use this information to contact technical support:

Phone/ Fax	United States/Canada	Tel.: 1.440.646.5800 Fax: 1.440.646.5801
	Outside United States/Canada	You can access the phone and fax number for your country via the Internet: <ol style="list-style-type: none"> 1. Go to http://www.ab.com 2. Click on <i>Product Support</i> (http://support.automation.rockwell.com) 3. Under <i>Support Centers</i>, click on <i>Contact Information</i>
Internet	⇒	<ol style="list-style-type: none"> 1. Go to http://www.ab.com 2. Click on <i>Product Support</i> (http://support.automation.rockwell.com)
Email	⇒	RACleAsktheExpert@ra.rockwell.com (This replaces info@software.rockwell.com)

Technical support is available from 8:00 AM to 8:00 PM Eastern Standard Time on business days.

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